EASILY CONTROLLED EXHAUST TUBE

FIELD OF THE INVENTION

The present invention relates to an exhaust tube, and particularly to an easily controlled exhaust tube, wherein the driver may control amount of the exhaust tube easily.

BACKGROUND OF THE INVENTION

For objects of environmental pollution, noise and exhaust gas from a car is limited with the areas. Moreover, the driving speed and sense of the driver have a great effect to the amount of the exhaust gas. For example, in suburb or when climbing upwards along a mountain path, the larger power is required and thus much gas is exhausted. However, as driving in a city, it is required that the noise and exhaust gas from a car must be reduced for matching the requirement of environmental protection. In general, the amount of exhaust gas can not be controlled as desired. Although in prior art, adjustable exhaust tube have been developed, it is inconvenient since the user must leave the car to adjust the amount of exhaust gas by other tools.

SUMMARY OF THE INVENTION

Accordingly, the primary object of the present invention is to provide an exhaust tube, the driver may control the variation of exhaust gas without needing to adjust the exhaust tube for controlling the amount of the exhaust tube by other tools. As a result, the noise may be reduced easily and the performance of acceleration is enhanced.

To achieve above objects, the present invention provides an easily controlled exhaust tube which has a manifold. One end of the manifold is connected to a distal end of a connecting tube. Another ends of the manifold are extended with a left branch tube and a right branch

tube. The left branch tube is directly connected to an outer tube of a first noise eliminating tube and the right branch tube is connected to an inner tube of a second noise eliminating tube which has a valve seat. The left and right branch tubes are enclosed by outer tubes. Glass fibers and stainless steel and cotton structure are filled in the outer tube. A connecting piece is welded between the first and second noise eliminating tubes. A valve is installed in the valve seat. A front and a rear sides of the valve seat have respective washers. The valve is controlled by a controller.

The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in conjunction with the appended drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded view of the present invention.

Fig. 2 is a cross sectional view of the present invention.

Fig. 3 is a schematic view showing the operation of a valve of the present invention.

Fig. 4 is a schematic view showing the operation of the present invention.

Fig. 5 is another schematic view showing the operation of the present invention.

Fig. 6 is a schematic view showing that the present invention is installed to a car.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In order that those skilled in the art can further understand the present invention, a description will be described in the following in details. However, these descriptions and the appended drawings are only used to cause those skilled in the art to understand the objects, features, and characteristics of the present invention, but not to be used to confine the scope and spirit of the present invention defined in the appended claims.

Referring to Figs. 1 to 3, the novel exhaust tube of the present invention is illustrated. The exhaust tube has a manifold 20. One end of the manifold 20 is connected to a distal end of a connecting tube 10. Another ends of the manifold 20 are extended with a left branch tube 21 and a right branch tube 22. The left branch tube 21 is directly connected to an outer tube 32 of the first noise eliminating tube 30 and the right branch tube 22 is connected to an inner tube 400 of a second noise eliminating tube 40. The second noise eliminating tube 40 has a valve seat 50. A connecting piece 60 is welded between the first and second noise eliminating tubes 30 and 40.

The left branch tube 21 protrudes from the first noise eliminating tube 30. The tube wall of the outer tube 32 has noise eliminating holes 211. Stainless steel and cotton structure 212 encloses the left branch tube 21.

The edge of the right branch tube 22 has a locking seat 221. The locking seat 221 is combined with the locking seat 401 of the second noise eliminating tube 40 by the screw 402 and the nut 403.

The front tube wall of the inner tube 300 of the first noise eliminating tube 30 has noise eliminating holes 31. Then stainless steel and cotton structure 311 encloses the first noise eliminating tube 30. An outer tube 32 encloses the section having the stainless steel and cotton structure. A front isolating tube 322 and the rear isolating tube 323 are installed in the outer tube 32 for installing the left branch tube 21 and the inner tube 300 of the first noise eliminating tube 30. Glass fibers 321 are filled in the outer tube. A flowing area is formed between the inner tube 300 of the first noise eliminating tube 30 and the left branch tube 21. A rear section of the inner tube 300 of the second noise eliminating tube 30 is engaged with a distal tube 33.

The front end of the inner tube 400 of the second noise eliminating tube 40 is installed with a locking seat 401. Two sides of the locking seat 401 are combined to the right branch

tube 22 by screws 402. The middle section of the inner tube 400 of the second noise eliminating tube 40 has noise eliminating holes 41 at the tube wall thereof. Stainless steel and cotton structure 411 encloses the noise eliminating holes 41. An outer tube 42 encloses the section having the holes 41. Glass fibers 421 fill the outer tube 42. A distal end of the inner tube 400 of the second noise eliminating tube 40 is engaged with a distal tube 43.

A valve 51 is installed in the valve seat 50. The front and rear sides of the valve seat 50 have respective washers 53, 54. The valve 51 is controlled by the controller 52. The controller 52 has a motor which drives a gear 521. The gear 521 is engaged with a gear 512 on a rotary shaft 511. The rotary shaft 511 is combined with the valve 51.

In the following, a general travel condition and condition of moving on a high way will be described.

1. In normal condition (referring to Fig. 4), since the controller 52 is closed, the valve 51 is also closed. The exhaust gas is hindered by the valve 51 and thus gas flows into the outer tube 32 of the first noise eliminating tube 30 from the left branch tube 21 of the manifold 20. Thereby, part of the gas flows out from the noise eliminating holes 21 of the left branch tube 21 and the exhaust gas is filtered by the glass fibers and stainless steel and cotton structure. Thus, gas flows in the outer tube 32 so as to reduce the speed thereof. A part of gas enters into the noise eliminating holes 31 of the inner tube 300 through flowing section 34 and passes through the stainless steel and cotton structure 311. Then the exhaust gas is vented out. As a consequent, the flowing path and filtering process of the exhaust gas are prolonged so as to reduce noises (thereby, the amount of exhaust gas is matched to the requirement of a city).
2. When a car 70 is to be accelerated for moving in mountains, suburbs, or highways (referring to Figs. 5 and 6). It is only necessary to open the switch. The controller 60 is connected to a switch C in the driver' s seat in a car so as to control the

actuation, stopping, positive rotation and negative rotation of the motor M. The gear 52 rotates to drive the valve 51 to rotate. When the valve 51 opens, part of vented gas enters into the outer tube 32 of the first noise eliminating tube 30 (the flowing path has been described hereinabove, and thus the details will not be further described). Part of gas flows into the second noise eliminating tube 40. After the gas is filtered by the glass fibers 411 and stainless steel and cotton structure 421, the gas is vented out directly, or part of gas is vented out directly from the second noise eliminating tube 40. Therefore, the speed is accelerated.

By the present invention, the driver may control exhaust gas without needing to adjust the exhaust tube for controlling the amount of the exhaust tube by other tools. As a result, the noise may be reduced easily and the performance of acceleration is enhanced.

The present invention is thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.